



**Miniport Receiver EB200** 





# Miniport Receiver EB200

## Portable monitoring from 10 kHz to 3 GHz

- Ergonomic design for on-body operation
- Continuous frequency range 10 kHz to 3 GHz
- Detection of unlicensed transmitters
- Location of close-range to medium-range targets with the aid of Handheld Directional Antenna HE200
- Digital IF section with 12 bandwidths (150 Hz to 150 kHz)
- Fast, accurate level indication across 110 dB dynamic range
- Scanning modes
  - Frequency scanning
- Memory scanning
- Frequency spectrum (option)
- IF panorama display (option)
- Remote-controllable via RS232 CPPP or LAN (Ethernet 10Base-T)

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### Brief description

Miniport Receiver EB200 with Active Directional Antenna HE200 is a portable unit for radiomonitoring in the wide frequency range from 10 kHz to 3 GHz. Whether used for monitoring In case of power supply interruption, all the data is stored. Operation can thus be resumed immediately after the power supply is restored.

- Location of close-range to mediumrange targets with the aid of Handheld Directional Antenna HE200
- Detection of undesired emissions including pulsed emissions
- Detection of unlicensed transmitters communicating illegally or interfering with licensed transmission



emissions, detecting interference or locating mini-transmitters irrespective of their position, EB200 offers features unrivalled in its class. The favourably priced and compact receiver with LAN interface may also be used in computer-based stationary systems.

The EB200 is characterized by high input sensitivity and frequency setting accuracy throughout the frequency range from 10 kHz to 3 GHz.

Its small dimensions and low weight as well as a sturdy, pickup-proof die-cast aluminium housing with well-protected integrated operating elements make the EB200 ideal for use in places which cannot be reached with a vehicle. Its low power consumption permits battery operation typically of four hours. The EB200 battery pack is easily accessible and can be exchanged quickly.

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EB200 fulfils the following tasks:

- Monitoring of given frequencies, eg storage of 1 to 1000 frequencies, squelch setting, constant monitoring of one frequency or cyclical scanning of several frequencies
- Searching in a frequency range with freely selectable start and stop frequency and step widths of 1 kHz to 9.999 MHz
- Protection against tapping by detecting miniature spy transmitters (bugs)
- Monitoring of one's own radio exercises in a service band
- Monitoring of selected transmissions
- Remote-controlled operation via modem and PC in coverage measurement and monitoring systems

EB200 and HE200: ergonomic design for on-body operation





Frequency range Frequency setting via keypad or rollkey

Frequency accuracy Aging Synthesizer setting time Oscillator phase noise

Antenna input

Oscillator reradiation RF attenuation Input selection 100 kHz to 20 MHz 20 MHz to 1.5 GHz 1.5 GHz to 3 GHz

Interference rejection, nonlinearities

Image frequency rejection IF rejection 2nd order intercept point 3rd order intercept point Internal spurious signals

Sensitivity Overall naise figure (including AF section) 20 MHz to 650 MHz 650 MHz to 1500 MHz 1500 MHz to 2700 MHz 2700 MHz to 3000 MHz

AM, bandwidth 6 kHz,
f<sub>neg</sub> = 1 kHz, m = 0.5
20 MHz to 2700 MHz, V = 1 µV ≥ 10 dB
2.7 GHz to 3 GHz, V = 1.3 µV ≥ 10 dB
FM, bandwidth 15 kHz,
f<sub>neg</sub> = 1 kHz, deviation = 5 kHz
20 MHz to 2700 MHz, V = 1 µV ≥ 25 dB
2.7 GHz to 3 GHz, V = 1.3 µV ≥ 25 dB

Demodulation IF bandwidths

IF bandwidths for level and deviation indication

Squelch Gain control IF control RF + IF control

Deviation indication Signal level indication

IF panarama display (option SU)

Scan characteristics Automatic memory scan

Frequency scan

Inputs/outputs Digital IF output

Bidirectional reference frequency connectors

out I/Q output (digital) IF 10.7 MHz, wideband 10 kHz to 3 GHz

1 kHz, 100 Hz, 10 Hz, 1 Hz or in selectable increments ≤±1.5×10° (−10°C to +55°C) ≤±0.5×10°/year ≤-100 dBc/Hz at 10 kHz offset

N socket, 50 Ω, VSWR ≤3; SMA connector for rackmounting at rear panel ≤-107 dBm 30 dB, man. or autom., switchable

highpass/lowpass tracking preselection highpass/lowpass

≥70 dB, typ. 80 dB ≥70 dB, typ. 80 dB typ. 40 dBm typ. 2 dBm ≤-107 dBm

≤14 dB, typ. 12 dB ≤15.5 dB ≤14 dB, typ. 12 dB ≤15 dB, typ. 13 dB measurement with telephone filter to measu CCITT

AM, FM, USB, LSB, CW 12 (150/300/600 Hz/1.5/2.4/6/ 9/15/30/50/120/150 kHz)

15 (150 Hz to 1 MHz) only with IF Panoramic Unit EB200SU signal-controlled, can be set from -10 dBµV to +100 dBµV AGC, MGC 80 dB 110 dB digital retuning for signals unstable in digital returning for signals unstable in frequency graphical with tuning label graphical as level line or numerical from -1 0 dByV to +1 00 dByV, acoustic indication by level tone internal module, ranges 25, 50, 100, 200, 500, 1000 kHz

1000 definable memory locations to each of which a complete data set can be allocated START/STOP/STEP definition with receiving data set

serial data (clock, data, frame) up to 256 ksps: 2 x 16 bit

10 MHz, BNC 0.1 V to 1 V;  $R=500\,\Omega$  0 dBm,  $R_p=50\,\Omega$  AF signal,  $2\times16$  bit  $\pm5$  MHz uncontrolled for external panoramic display

AF output, balanced Loudspeaker output Headphones output Output log. signal level

ВПЕ

Data interface Option

General data Operating temperature range Rated temperature range Storage temperature range Humidity Shock

Vibration (sinewaye)

Vibration (noise)

Electromagnetic compatibility (EMC)

Power supply

Dimensions ( $W \times H \times D$ )

Weight (without battery pack) Battery pack

600 Ω . OdBm 8 Ω , 500 mW via volume control 0 V to +4.5 V

monitoring of test signals by means of loop test

RS232 C PPP LAN (Ethernet 10 Bose-T)

–10°C to +55°C -10°C to +55°C
0°C to +50°C
-40°C to +70°C
max, 95%, cyclic lest 25/55°C
to DIN IEC 68-2-27
[MILSTD-810D, MILT-28800D), 40 g, shock spectrum 45 Hz to 2 kHz
to DIN IEC 68-2-6 (MILT-28800D),
5 Hz to 55 Hz, 0.15 mm amplitude
to DIN IEC 68-2-36, 10 Hz to 500 Hz,
19 a firm3 1.9 g (rms) EN50081/82-1,82-2, MILSTD-461, CE03; RE02 and RS03 battery pack (typ. 6 h operation) or DC 10 V to 30 V (max. 22 W) 210 mm x 88 mm x 270 mm 1/219\* x 2 HU 4 kg 1.5 kg

#### Directional antennas HE200/HE200HF

Frequency range Antenna modules

20 MHz to 200 MHz 200 MHz to 500 MHz 500 MHz to 3000 MHz Option 0.01 MHz to 20 MHz Polarization

Loop antenna 0.01 MHz to 20 MHz

Naminal impedance SWR RF output Gain Antenna factor Fieldstrength sensitivity Linearity of amplifier

Current drain

Power supply Dimensions (W x H x D)

General data Operating temperature range Rated temperature range

Storage temperature range Vibration resistance

Shock resistance

Weights: vveigns: Supply and display unit with adapters and composs RF modules 20 MHz to 200 MHz 200 MHz to 500 MHz 500 MHz to 3000 MHz 0.01 MHz to 20 MHz

0.01 MHz to 3000 MHz 20 MHz to 3000 MHz, with 3 plug-in antennas loaded loop antenna loaded loop antenna log-periodic antenna

loop antenna vertical for all antenna modules, hori-zontal polarization by turning the lon-gitudinal antenna axis by 90°

direction finding for horizontally polarized signals not possible because of circular vertical pattern of system 50  $\Omega$ 50 12

22.5 typ.

Im coble with N connector for typical values see page 7 for typical values see page 7 for typical values see page 7 lp3, typ. 19 dBm (battery voltage 6 V, 25°C)

55 mA in active mode 0 m A in possive mode in handle, 4 x 1.5 V mignon cell R6 470 mm x 360 mm x 180 mm (in transport case)

-30°C to +60°C active/passive mode -10°C to +50°C active mode -30°C to +60°C passive mode -30°C to +60°C random 10 Hz to 300 Hz: 0.01 g²/Hz, 300 Hz to 500 Hz: 0.003 g²/Hz, every 30 minutes in 3 orthogonal case; acceleration approx. 1.9 g ms max. 40 g, crossover frequency 45 Hz in 3 orthogonal axes

0.5 kg 0.65 kg 0.55 kg 0.3 kg 0.45 kg 0.4 kg

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If you would like further Information about ELAMAN, or would like to discuss a specific requirement or project, please contact us at:

Elaman GmbH German Security Solutions Seitzstr. 23 80538 Munich Germany

> Tel: +49-89-24 20 91 80 Fax: +49-89-24 20 91 81 info@elaman.de www.elaman.de